

Public Scoping Summary

Bear Lodge Project EIS

Prepared for:

Black Hills National Forest

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1.0 INTRODUCTION

Rare Element Resources, Inc. (RER) has developed and submitted a Plan of Operations (updated February 2014) to the Forest Service for a rare earth elements mining operation. The Forest Service will process, administer, and manage mining operations conducted on National Forest System (NFS) lands under the authorities of laws and regulations that confer right to go upon and use open public domain land. Forest Service regulations at 36 Code of Federal Regulations (CFR) 228 set forth rules and procedures of management of mining-related activity on NFS land to minimize adverse environmental impacts on surface resources.

1.1 Purpose of Scoping Summary

This report describes the public scoping process for the Bear Lodge Project Environmental Impact Statement (EIS). It documents outreach efforts, summarizes the comments received, and identifies issues raised and suggested alternatives to the proposed action. The scoping summary has been prepared for the public, decision-makers, and EIS team members to easily see the common themes and issues in scoping comments. Internal scoping of the cooperating agencies and lead agency will identify additional issues, mitigation measures and possible alternatives. Comments received during scoping will be used to shape the analysis and alternatives analyzed in the EIS, however, no direct response will be made to scoping comments. All comments received have been included in the project record.

1.2 Project Description

A scoping letter (**APPENDIX A**) and project description (**APPENDIX B**) were provided to the public for comment. The project description is summarized below.

RER is proposing to mine and recover rare earth elements in northeastern Wyoming. The Bear Lodge Project is located approximately 12 miles north of Sundance, Wyoming. The project area consists of 8,750 acres, which includes NFS lands in the Black Hills National Forest, Bearlodge Ranger District and private lands (**Figure 1 in APPENDIX A**).

An open pit mine, physical upgrade plant (PUG), and other mine facilities would be located at Bull Hill on NFS lands and on adjacent private lands. The proposed mine area is approximately 1,700 acres; about 1,060 acres of NFS lands and 640 acres of private lands. At Bull Hill, RER would construct a 232-acre open pit mine to remove rare earths mineral bearing ores. At the mine site, materials will be crushed, sorted, stored and shipped to a processing facility in Upton, Wyoming, approximately 45 miles away.

Construction of the mine facilities would remove 8.7 miles of existing NFS roads. New roads would be constructed and existing roads upgraded to accommodate hauling materials from the pit to the PUG, to storage facilities, and to Upton for further processing.

Miller Creek Road is the proposed main access route to and from the mine area (County Roads 208, 266, and 8 and NFS roads 854 and 851). This 13-mile access route would be upgraded to accommodate two-way driving traffic. The mining traffic is estimated between 13 to 17 round trips of semi-trucks of processed ore material each day during operation. This estimate does not include worker traffic or delivery supply vehicles.

A 69 kilovolt (kV) transmission line would be constructed above ground to provide electricity to the mine area. Approximately 1.5 miles of the power line would cross NFS lands, while the remainder would be on private and State of Wyoming lands.

Exploration activities would continue during the next 43 years while mining activities continue. Up to 2,000 drill holes are proposed over the life of the mine, with a maximum of 48 drill holes annually. Approximately 20,000 feet of trenching may be completed over the life of the mine. Before each exploration season, RER will provide the Forest Service with a Work Plan identifying the drilling locations and areas of disturbance. The plan of operations also includes mine closure and reclamation at the end of the mine life.

2.0 SCOPING PROCESS

This section provides a description of the public scoping process, the techniques that were used to notify the public about their opportunity to be involved in scoping, and a brief summary of the public scoping meetings. The scoping comment period occurred from March 20 to April 30, 2014.

2.1 Scoping Announcements

Initiation of the EIS process and the public scoping meetings were announced through an email, a mailing, a notice in the Federal Register, press releases, and the Black Hills National Forest Service project web site (<http://www.fs.usda.gov/projects/blackhills/landmanagement/projects>).

2.1.1 Mailings

A short announcement was emailed to people on the mailing list. The email included attachments with the scoping letter and project description. Printed copies of the scoping letter and project description were mailed to people on the mailing list. Both of these mailings went out on March 26, 2014.

2.1.2 Federal Register

Notice of Intent (NOI) to prepare an EIS was published on Friday, March 28, 2014 (79 FR 17497, Pages 17497-17500 Document Number 2014-06916). The NOI is presented on the project web site, referenced above).

2.1.3 Web Site

Forest Service prepared news releases to introduce the project, announce the scoping period, and publicize the scoping meetings and their respective locations. The news releases were posted on the Black Hills National Forest Service project web site.

2.1.4 Media Releases and Public Service Announcements

Announcement regarding the public scoping meetings and scoping process were issued as news releases on March 26, 2014, to local and regional newspapers, radio stations and TV stations in Wyoming and South Dakota.

2.2 Public Scoping Meetings

Forest Service hosted two public meetings in April 2014 to provide planning and NEPA information for the public and agencies and allow them to identify issues and concerns. Public scoping meetings were advertised on the Black Hills National Forest Service project web site, and through the local media. Attendance at the meetings is summarized in **Table 1**. The public was invited to sign in at the meetings but there were people at both meetings who did not sign in. At the public meetings the project description, Appendix B, and a copy of the notice of intent was provided.

Prairie Hills Audubon Society hosted an additional meeting via Skype on April 23, 2014. Approximately 50 members of the public participated from Rapid City, South Dakota and Spearfish, South Dakota. Forest Service participated at this meeting.

Table 1. Public Scoping Meeting Attendance		
Date	Meeting Location	Signed In
April 14, 2014	Sundance, WY	142
April 15, 2014	Upton, WY	139
April 23, 2014	Skype	50
Total		330

3.0 COMMENT ANALYSIS

3.1 Comment Analysis

The Council on Environmental Quality regulations for implementing NEPA defines scoping (40 CFR 1508.7) as a way to determine the scope, significant issues to be analyzed, and not significant issues.

To accomplish this, all comments submitted were reviewed by a team of analysts. The team was instructed to look for comments that could be defined as the following types of comments:

- Purpose and Need for the Project.
- Alternative Development Comments – These are comments that indicate another alternative needs to be reviewed.
- Alternative Description and Mitigation Measures – These comments suggest modifications to already defined alternatives that reduce or avoid potential impacts or asked questions about the project.
- Effects Analysis – These comments specify concerns over the effects on resources or suggest effects that need to be considered and disclosed.

3.2 Processing Comments

A comment database was established to help track comments received throughout the life of the NEPA process. This database received each comment, note, letter and email. Each is assigned a unique number, which is associated both with the one or more comments identified within that communication falling into the below categories and with the commenter name and address. Each identified comment is entered verbatim into the database together with its proposed disposition in the Draft EIS.

Scoping continues throughout the DEIS writing process. Comments that come in later than April 30, 2014 will be reviewed to determine if new issues are raised that need to be included in the EIS, but the specific comments are not identified in this summary.

In the following sections, comments have been grouped, consolidated, and edited to highlight the specific concerns and make it easier to locate issues. The EIS team will use these comments in development of the EIS, and the individual comments will be evaluated more in depth if needed to understand the concern. Additionally, the comment tracking database includes a brief description of how each comment was handled during development of the DEIS. This document does not contain direct quotes from the comments received, but is a summary of the themes and issues. Specific comment questions or concerns are not addressed in this summary, they will be addressed in the Draft EIS.

4.0 SUMMARY OF COMMENTS

The following summary of comments is the result of the comment analysis, where comments are categorized for use in development of the EIS.

4.1 Communication

- The current website on the FS homepage is difficult to use. An easier to use website with project information is needed.
- Develop a list-serve, which the public can sign-up on for project updates (this is done by the BLM and is very effective).
- Continue to improve and expand opportunities for stakeholder involvement, which will be critical for minimizing impacts.
- Make all GIS data and other resource information available on project website
- Explain how public participation will be included in this project

4.2 Support or Opposition

During the NEPA process, it is stated frequently that public comments are not considered “votes.” The comments are useful for decision makers to understand why the public holds positions of support or opposition.

Comments made in support of the project included statements such as:

- The project will stimulate economic growth in our local communities and Wyoming.
- Bear Lodge will provide 150 to 200 new local jobs.
- Having a domestic source of critical rare earths is important for the supply chain and national security.

Comments made in opposition of the project included statements such as:

- Increasing the size of Bear Lodge Ranch Road and constructing a power line on adjacent private property will impact the area.
- There will be a direct loss of acreage available to the public for recreational use.
- The project will cause permanent alteration of the headwaters and riparian corridors associated with Beaver and Whitetail Creeks.
- The project will impact air and water quality and will directly affect human health and safety agriculture producers, landowners and wildlife in the area.
- The long term impacts left after the mine closes will be a legacy we leave to our kids and grandkids.

- These lands have tribal historic importance.

4.3 Purpose and Need for the Project

The Forest Service developed a purpose and need for the project in accordance with NEPA requirements which were included in the scoping materials. There were several comments about the stated purpose and need being too narrow:

- The purpose and need is so limited and narrow only the Plan of Operations submitted by the Company can meet it.
- The purpose and need should allow for an alternative with more mitigation and reclamation
- What is the need for this project?
- Is this need in the best interest of the public if it disturbs public use of public land?
- What are the government's policies related to rare earth minerals mining operations?

4.4 Project Description

Several comments ask questions or request clarification on the project itself. These comments will be addressed through added detail in the project description included in Chapter 2 of the EIS.

- Exploration plans should be reviewed as part of the draft EIS.
- This is a long-term project, and the company's long-term ability to complete operations and to mitigate, monitor, and reclaim the site must be insured before a DEIS is issued.
- If there is a break in operations what mitigation, monitoring, and reclamation will be required at the mine site, access roads, waste rock pile, and hydromet plant?
- Is there the capacity at the waste site for the next 50 years?
- Due to the expected radioactive nature of mine materials, "long-term" should be defined as at least 500 years.
- More information is needed on the tailings storage facility and what will happen to the produced tailings?
- Where will these minerals be separated into the rare earth concentrate?
- What is the exact nature of all processing fluids and materials at the PUG plant?
- What is the nature of the processed materials at each stage of processing?
- What baseline monitoring for rare earth minerals has been completed?
- What is the baseline characterization of soils, including the percentage of each rare earth that is present at different locations, radiological and chemical components, and the common components of soil?

- What is the toxicity of each rare earth, and the impact on human health water?
- How do rare earth elements move in the environment and is it possible to fully reclaim a rare earth mine?
- Will naturally occurring fissures and fractures be expanded by blasting and result in contamination of aquifers?
- What is the solid waste disposal plan?
- A draft Emergency Response Plan is needed.
- Will supply lines be above ground or buried?
- A possible flood would require larger ponds and "fail safe" secondary ponds.

4.4.1 Access/Roads/Traffic

- How will public access to the area be affected?
- Permanent right of way and construction easements beyond the roads existing 66 feet width will be required.
- What are the reclamation plans for the old road where realignments are proposed (i.e. Carson Draw Corner)
- What are the plans for fencing and approach and access?
- The speed limit for haul trucks should be kept at 30 mph.
- The haul trucks should be covered.
- Will van pools continue during mine operation?
- Where is the parking facility for worker vehicles and mine vehicles?
- Approach lanes should be added at the stopping and turning locations of heavy commercial traffic, i.e. Warren Peak Road and HWY 14 and Warren Peak Road and County Road 266.
- Will the road be maintained by Crook County or by the mine developers?
- Will use of the Miller Creek road by the public be safe considering blind spots and intersections, dangerous approaches, and wide-turning truck movements?
- Have adequate plans been made for hazardous spills along highways and rail lines?
- How will chemicals be delivered, handled and stored?
- What are the impacts of transportation of waste to an off-site waste repository?

- The number of haul trucks and total mine vehicles per day and vehicle mileage are inconsistent in the PoO
- Large wind rows of snow from plowing the full width of the road should not be left blocking approaches to homes or rancher feeding and calving gates.
- The impacts on recreational access should be mitigated.
- Will hauling be 24/7 and will the haul trucks travel in pairs, spaced throughout the driving hour day, or released in convoy fashion?
- What are the noise impacts of blasting and haul trucks?
- Varying levels of dust control may be satisfactory for different parts of the access road.
- Will there be truck turnout for parking on the shoulder of the road or turnouts and approaches leading into occupied and frequently used properties along the route?

4.4.2 Air Quality

- What is the air quality class of the area?
- Will the dump hopper be inside a fully contained building?
- The amount of dust particulate generated and the amount of water and magnesium chloride needed to control the dust are significantly underestimated in Appendix C.
- The prevailing summer wind direction is from the SW, towards Carson Draw and the average speed of haul trucks is not taken into account.
- The Air Force should have air quality data from either the fire tower or the radar station formerly located on Warren Peak.
- No airborne particulate, waste rock, ore, tailings or soil data for rare earth constituents is provided or described for the mine area in the PPO.
- The wind speed information for Bull Mountain is not accurate since the wind speeds were conducted at the airport in Spearfish, South Dakota
- The EPA recommends an emissions inventory be completed as the first step in the NEPA air quality analysis.

4.4.3 Economy

- Will there be any increased tax revenue in Crook County?
- Will Canada or the USA receive taxes on the profits?
- How does lost revenue from the mine relate to the US budget deficit?

- Are there any federal or state grants or incentives that have been given the development of a Canadian owned mine?
- What is the value of having a rare earth mine in the US?
- Is the company economically viable and is there enough financial backing to ensure that a high quality and safe operation will be established?
- How sensitive is the mine to prices for rare earth elements? As the supply becomes more than the demand, will it lead to an early closure?
- What costs will be “out-sourced” to the public, either as taxpayer expense, rate-payer expense, or public, such as a new health care expense that may be forced on public by environmental impacts of company?
- What are the costs to the Forest Service, DEQ, NRC and other state, federal county and city agencies of reviewing, permitting and monitoring the proposed mine? How does the Company pay those costs back?
- What are the company's taxes and licensing, permitting, and monitoring fees?
- How will Forest Service time to prepare the FEIS be paid, will other resource planning suffer while mine plan is written?
- What is the value of the minerals and how much will the Company pay the treasury?
- What is the cost of remediation and is there adequate bonding to handle the cleanup and reclamation?
- What are the costs of the long-term maintenance and management activities proposed for the project and the post-closure obligations for the operator?

4.4.4 Public Health and Safety

- Baseline testing should be conducted by an independent contractor and should include: radiological, trace minerals, rare earths, turbidity, biological, Dissolved Oxygen, and dust evaluations.
- Using fence to restrict access is problematic as it will need constant maintenance for an undefined period of time. Who will be responsible for maintaining the fence?
- The focus on the economic benefit of the project is overshadowing the more important issues of public safety and the protection of Wyoming's air and water.
- Who will supply the firefighting or ambulance equipment? Who pays for the specialized PPE and other equipment necessary for fighting fire within the mining compound?
- How will anyone fight a forest fire in the project area if it is fenced off?
- Who will train fire fighters? Will there be an ambulance and EMT's on site?

- An emergency response plan is necessary.
- If there is an accident and spill at the plant where will the hazmat crew come from? How long would it take?
- What are the potential impacts to the environment, human health and occupational safety from materials and wastes from the PUG plant?

4.4.5 Regulatory Framework

- The Company will need to contract with a municipality or private facility for its wastewater disposal or obtain a County and DEQ small wastewater disposal Permit.
- What federal agency will be responsible for regulating any leaching of hazardous substances?
- Why are Wyoming NRCS standards for barbed-wire fence not proposed?
- Why would sedimentation be the only pollutant required to meet effluent standards in the WPDES permit for discharges to surface waters?
- What other constituents are expected to be present in the ore and waste pile? How will the three constituents of interest (arsenic, iron, and manganese), be addressed?
- What type or degree of change to the proposed plan would or would not require reevaluation under NEPA, particularly with respect to expansion?
- Is the Nuclear Regulatory Commission going to analyze detailed information about the proposed mine, waste rock, transportation, and the hydromet site.
- What licenses will be required by the Nuclear Regulatory Commission?
- Do activities require Department of Defense authorization?
- Who approves mitigation measures proposed for cultural resources?
- What legal requirements will be in place to ensure that the land is restored following the mining operation?
- The company is not entitled to the use of lands for the proposed pipelines, transmission lines, access routes, etc., since these are not covered under the 1872 Mining Law. These activities should be reviewed and considered under FLPMA Title V and the agency's special use permitting regulations.
- What type of closure measures are proposed for the facilities in Upton?
- Who will assume long term liability of storage tanks associated with the hydromet plant and mine tailings?
- There are no mining claims in the NE corner of Project Area, why is it included?

- Where does the 43 year exploration apply?
- Does the company have mining or milling claims at the PUG plant site?
- The 2/2014 Plan does not meet the requirements of 36 CFR 228.4.
- Routine activities with minor impacts associated with mining activities could be authorized by Nationwide Permit (NP) 44 and documentation currently available indicates that a standard permit would be required for the Project located in Crook County, Wyoming.
- The state regulations for water quality standards are inadequate or too vague and it may be necessary for the FS to adopt interim water quality standards.
- Why would the DEQ, EPA or Forest Service allow creation of a toxic or hazardous water filled lake on public land that will impact birds, wildlife and livestock?
- Has the Wyoming Department of Environmental Quality (DEQ) or the Wyoming Environmental Quality Council adopted standards, effluent limits/guidelines for rare earth minerals?
- Who will monitor the exploration boundaries and extension of the mine?
- How will the public be informed of any infractions on the part of RER?
- There should be a comprehensive plan for the 2000 or more exploration holes they plan to drill including location, how are they to be sealed, and what happens if they hit water.
- If the company is sold will the new party have to follow the same rules & guidelines?
- Are NMSA, OSHA, E.P.A involved in the planning process?
- Even if there are high contaminant values in baseline tests of the groundwater and surface water any release, regardless of current conditions, should meet standards (i.e., treatment would be needed).
- The sediment ponds and diversion channel (and all other discharge sources) will require Clean Water and Air Act permits which should be obtained prior to project approval
- The quality of all waters that will be disturbed, generated, moved, or used should be fully analyzed (including a fate and transport analysis).
- Will gold and silver be mined as part of the Bear Lodge Project?

4.4.6 Recreation

- There are discrepancies between PoO map and the public map for the snowmobile trail system for the location of Trail E, which is located farther south, and an extra trail west of Trail A.
- It is important to have a map which clearly overlays all existing snowmobile trails onto the total project area (mine area, PUG area, access roads, and exploration area) to ensure all potential impacts to snowmobile trails are properly analyzed and disclosed.

- It is not safe to have the 6-foot chain link fence constructed around the Physical Upgrade (PUG) Plant located immediately adjacent to the road (FSR 838).

4.4.7 Seismic

- According to the Plan of Operations document, a portion of the proposed project area administered by the U.S. Forest Service (USFS), is excluded due to activities by the U.S. Department of Defense (USDOD).
- When seismic testing is done, the Forest Service should monitor impacts to stream erosion and emphasize minimal impact to local wildlife.
- Natural rock fissures and fractures at the mine site, waste rock site, and hydromet plant site must be carefully identified and analyzed to determine impacts from blasting and mining.
- Has baseline data been collected on area seismic activity given the amount of blasting that will occur on-site?

4.4.8 Water

- How much water will be recycled or reused and how much will be continually pumped for the different processes?
- What will be placed in all ponds including quality, quantity, and specific chemical and radiological characteristics?
- What will the estimated water consumption be at the Upton facilities (and subsequent refining location)?
- What is the nature of the aquifers and surface waters in and around the project area?
- What aquifer(s) will be utilized and how will they be recharged (at what rate)?
- What is the current quality, quantity, minerals content, radioactive characteristics, acidity, and chemical content of groundwater at the proposed mine site, waste rock area, tailings area, PUG plant, and hydromet plant?
- Are there agricultural, domestic and public water supply wells or intakes that will be used?
- Will the loss of water, in either quantity or quality, be mitigated if private or public wells or aquifers are depleted or contaminated?
- How will mine effluent be kept out of Cook Lake and the Belle Fourche River?
- More information is needed on the chemistry or radiological characteristics of the PUG Plant derived tailings, the low grade ore and overburden to be stored at the "Waste Rock Facility" and the sides of the Pit "Fake Lake".
- How will tailings from the PUG plant be placed at the Waste Rock Facility and will they be mingled and/or separated from the overburden, low grade ore, top-soil?

- Will the tailings have a cover on top or a liner beneath them, and how will they interact with the two buried springs?
- Increased storm water runoff will compromise the area's resilience.
- Will spring fed surface runoff end up in the pit?
- Pit lake water and rain water will be in constant contact with mine walls, waste rock piles and ore stockpiles and the dissolution of bastnasite would release rare elements into the environment.
- How will waste streams be confined and what will be the quality and pH of the water released into the Beaver Creek watershed?
- How will metals and rare earth elements be kept out of the watersheds?
- Will the diversion of Beaver Creek remain after completion of the mine?
- Will diversion channels and sediment ponds be monitored for contamination?
- Could contaminants get into the watershed from dewatering ponds?
- Are there any rare earth constituents in the water now?
- Will MW-43 and MW-16 wells co-mingle to achieve the desired amount of 74 gpm to maintain the operation of the PUG plant and mine, and provide potable water to mine workers?
- Will some of Whitetail & Whitelaw Creeks' waters disappear into the Whitetail/Bull Hill Mine pit lake, thus depriving Whitelaw and ultimately Beaver Creek, Cook Lake and Belle Fourche of Wyoming & SD water? Is an appropriation of surface water to occur?
- What are the quantitative and qualitative impacts to both tributary headwaters and water supply of downstream surface waters in the impacted area or effects to farms, plant communities & wildlife.
- What are the exact dates of the 7-day continuous 100gpm pumping period in the summer of 2013?
- What is meant by the term "significant" with respect to the static level 'drawdown'?
- Identify the observation wells.
- A complete hydrogeologic description of the source water is necessary including information about whether the source is an aquifer, a confined aquifer, an aquitard?
- Does the MW-16 source contribute to the recharge of Madison (Pahasapa) Aquifer?
- What is the likelihood of the formation of a "cone of depression" and de-watering of nearby seeps, springs and surface streams.
- What are the possible hydrogeologic connections to the Madison (Pahasapa) aquifer, which, if present, could negatively impact the Sundance Municipal Wells?

- Detailed surficial geology maps are necessary of the areas surrounding MW-16, particularly the Breccia area in the Whitetail drainage above MW-16.
- If 7 days of continuous pumping required a 20-30 minute recharge to 'static levels', what predictions can be made concerning the recharge interval throughout 30+ years of continuous pumping?
- What is the "static water level" of MW-16 and does that "static level" represent a 'water table level'? Will MW-16's "static water level" be above or below the depths of the mineable pits if displayed in a geological cross-section map?
- How deep will the waste rock facility be "grubbed"?
- Will the waste rock facility be lined? Any area with potential infiltration issues should be lined. The pile of rock has the potential to be extremely toxic. What is the plan to contain the dust, or the run off?
- What is the under drain collection system proposed for the waste rock facility, will it drain into the sediment ponds?
- Prior to releasing sediment pond water back into naturally occurring streams will it have additional treatments?
- The settling ponds are not capable of dealing with anything over normal precipitation. The flood interval is not practical in their plan.
- Where are the leaching pond and overflow sediment catch basins located and how will accidental discharge to the surface or to the underground aquifer be prevented?
- Will there be any on-site treatment of the water used in the operations including the processing of pre-concentrate and further chemical processing to produce total rare earth oxide (TREO) product, before it is introduced into the town of Upton's waste water treatment facility?
- Is Upton prepared to treat the water for chemicals used in the production of TREOs or will this require upgrades to the town's wastewater treatment facility?
- What will be the waste water quality before and after treatment?
- How will waste water be treated, contained and disposed?
- How much waste water will the mining and processing produce?
- What are the precautions proposed to prevent escape of contaminated water in case of flood, earthquake, terrorist attack, collapse due to poor construction, overtopping or pipe leakage?
- Wyoming does not have aquatic life numeric nutrient criteria for nitrate as nitrogen, or for nitrate and nitrite as nitrogen. It is unclear where the criteria of 0.0008 or 0.00077 mg/L originated.
- Will the Pit Dewatering Pond be lined? What mitigation efforts will ensure the Pit Dewatering Pond does not contaminate Whitlaw Creek?

- Water Supply Well MW-16 is located downstream of the Pit Dewatering Pond. What mitigation activates will ensure groundwater linked to MW-16 will not be contaminated from the upstream Pit Dewatering Pond?
- What mitigation is proposed for the stream that is currently located where the mineable pit and the dewatering pond are mapped? What is the potential for groundwater contamination between the pit and this stream?
- How are surface water flow and groundwater infiltration rates expected to change at the project site?
- Will additional detention ponds or other dissipation measures be needed to maintain surface water flow rates similar to what currently exists on-site?
- Exact characterization of process water, including its minerals content, radioactive characteristics, acidity, source aquifer, content of individual rare earths, quantity, and chemical content, must be included in the DEIS.
- As information becomes available, please provide results of research from the radionuclide leaching program so the public is able to ascertain whether radioactive constituents are likely to mobilize.
- More information is needed about the source and management of arsenic.
- Who would be held responsible for any contamination of surface water or ground water including aquifers?
- Who is responsible for reclamation and liability?
- The double liner at Upton will be inadequate.

4.4.9 Reclamation

- How much topsoil will be placed over the waste rock pile after reclamation?
- Where will the topsoil come from?
- How can the pit lake be fenced forever?
- Will the hydric soils from the industrialized former springs and streams be stored?
- Will riparian shrubs and trees be planted and soil and sand and wetland plants, be placed in recovering stream beds/channels?
- Will recovered and restored streams be in straight lines or will they meander?

4.4.10 Connected Action

- 40 CFR 1508.25, states that to determine scope (range of actions alternatives and impacts considered) connected actions will be considered.

- 1508.8 Effects (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.
- The mine proposes 43 years of exploration, which is a connected, cumulative and/or similar action and thus must be considered in this DEIS.
- The Upton hydromet plant, waste rock piles and storage of waste at Hanford are connected actions with significant impacts
- The Forest Service needs to consider the impact of the entire project. This includes transport issues (new road, Upton, national transport to separate these minerals) and the Upton plant as connection actions
- Impacts on the Thunder Basin National Grasslands should be considered a connected action.
- Connected actions on non-forest service land should include:
 1. Upton Hydromet Plant and tailing pond;
 2. The placement of overburden, stockpiled ore, tailings, topsoil, holding ponds, and rerouting of streams on Section 16 (private land);
 3. Road building/re-building, maintenance on non-forest service roads and travel;
 4. Utility transmission lines;
 5. Appropriation of City ground water;
 6. Parking lots on private land; and
 7. Transportation of Radioactive, hazardous/toxic, solid, or human waste.

4.5 Design Features, Environmental Protection Measures, Mitigation Measures, or Monitoring

Many comment letters suggest specific mitigation measures or the analysts decided that the comment would be appropriate to mitigate impacts. Items listed below may be incorporated into the proposed action or environmental protection measures to reduce or minimize impacts. These features may be included in the plan of operation, if feasible, without fundamentally altering the mining methods or reclamation outcomes.

4.5.1 Access, Roads, and Traffic

- Wind and atmospheric data from the site and along the route should be used.
- The proposed mine's roads and operations will need to be adequate for all-weather conditions.
- An emergency response plan is needed for potential accidents at the mine and along the transportation routes.
- An alternate route around the south and east end of the mine that could connect with routes along Beaver Creek to Cook Lake may help with non-mine traffic.
- What if landowners are opposed to the road expansion on their property? How will that process be handled?

- Important to ensure that additional road traffic and maintenance will not contribute to increased impairment levels of the Belle Fourche River or any tributaries.
- There will be an increase in year-round vehicle traffic from the general public on Miller Creek Road
- There has been an increase in roadside refuse and RER should have a program to pick it up.
- Part of the proposed haul route is subject to spring weight restrictions.
- Consider using an already paved road which has more traffic for moving the rare earth materials.
- The proposed road is "open range" all the way through the forest and RER will be responsible for any collisions between trucks and cattle.
- An Access Road Use Plan is necessary, including hours and days that hauling would be allowed, dust control, weight restrictions, wildlife crossing areas, and snow removal.
- Hauling at night or during bad weather should not be allowed.
- RER should monitor their employees for speed and safety compliance.
- Set up a "hot line" number for complaints about hauling, road maintenance.
- A haul truck and vehicle safety compliance inspection program should be in place and the responsibility of RER.
- RER should repair fences in the spring from damage during snowplowing.
- New ROW fence lines with adequate set back from the borrow ditch will be required to accommodate the new wider road width and alignment adjustments and for the aggressive snow removal plan.
- Pave the haul road.
- Ensure that access to private property from NFS roads is maintained and if it is impacted it should be compensated.
- Control the noise, high traffic, dust, restrictions to egress/regress.
- The Access Rd plan should address noise including engine break restrictions.
- Monitoring stations for dust and noise should be set up on Bull Hill.
- Power poles should not be built in the county road right of way without permission of the County.
- Will there be sufficient distance (at least 15 to 20 feet minimum) between the shoulder of the road and the new chain link fence.

4.5.2 Air Quality

- Does Wyoming have a sampling plan in place for the project site? If not, will a third party also monitor the site? It seems like a conflict of interest for RER to be the sole party conducting radiological monitoring.
- What pollutants will be emitted into the air, surface or ground water?
- How will the negative impacts to air from mining and transport be mitigated?
- What effect will truck traffic have on the air quality along the haul roads?
- Control dust with magnesium chloride or equivalent.
- Special and highly effective suppression methods should be used in residential and certain agricultural zones and a higher level of suppression efficiency should be mandated.
- Air monitoring stations should be located at the mine and along the transportation route so that any radioactive dust associated with mining and transport can be monitored and tracked.
- Reduce GHG emissions.

4.5.3 Bond

- The full cost of mine mediation, cleanup and reclamation should be considered and a bond required for the full-cost, \$20 million is suggested for clean-up.
- The potential bond amount should be subjected to full public review during the NEPA process as part of the draft EIS.
- Taxpayers should not be left to pay the cost of clean-up.
- How are the counties and state protected financially?
- What bonding and precautions are in place to assure that the company and its investors will bear these costs?
- Is there adequate bonding to clean up the site if it proves uneconomical, unsafe, or not viable at any stage from beginning to end of the project?

4.5.4 Grazing

- Why fence around site?
- Affected permittees need to be compensated by Rare Element Resources, Inc. for loss of grazing and water.
- Grazing mitigations may include moving animals to open allotments, monitoring impacts of the project closely, construction of range improvements and purchase or lease of grazing lands to replace lands lost.

- RER should develop water (find water and put it in rubber tire tanks) on top of the Peaks and on the south side.

4.5.5 Heritage/Tribal

- In the Unanticipated Discovery Plan, will Tribes and the State be consulted during the evaluation process on whether the identified resource can yield significant information?
- Tribal Historic Preservation Offices (THPOs), should be included if there are any discovery situations.
- How will cultural resources located on private lands in the proposed project area be managed and protected?
- If the graveyard on Bull Hill is in the area to be disturbed by the Project, then mitigate and/or move it to the satisfaction of the Wyoming State Historical Preservation Office (SHPO).
- The NEPA process must include detailed plans for protection of cultural resources and for tribal group and individual access to the project site for spiritual activities.
- What actions have been proposed relating to the graveyard on Bull Hill?
- If items or remains are found within the project area boundary (both federal and non-federal land), how will they be handled? Will they be removed or allowed to stay in place?
- What agencies or tribes have had the opportunity to access these sites?

4.5.6 Light and Noise

- The installation of noise and sound barriers are needed including information on the form and effectiveness of these barriers.
- Prohibit engine break use from the top of Carson Hill, past Carson Draw Corner and past Mark Lambert's corner on to the State section.
- Quiet zone requirements should be strictly enforced, including signage and worker education.
- General lighting principles to protect night skies should include:
 1. light only where needed;
 2. light only when it is needed;
 3. shield lights and direct them downward;
 4. select lamps with warmer colors (less blue light);
 5. use the minimum amount of light necessary;
 6. select the most energy efficient lamps and fixtures.

4.5.7 Private Property

- Construction design should consider potential wildfire liability within the right of way due to cutting trees 75' on each side of the line.
- If landowners refuse easement, is eminent domain going to be used?
- Just compensation should be provided for the damage and loss suffered by the affected landowners including; nuisance, trespass, property damage, economic loss, and safety concerns.

4.5.8 Project description

- Potential impacts and mitigation must be considered for all aspects of the project, including wildlife, watersheds, groundwater, mine pit water, human health, and public financial costs.

4.5.9 Public Health and Safety

- Important to look at past history of rare earth mining in the U.S. and any problems that have occurred and consider alternatives and other measures to mitigate and prevent those problems from occurring at this proposed mine
- A radiological monitoring plan (including windblown particulate radionuclides) for all phases of the project should be used in conjunction with public programs to estimate the cumulative human health impacts from radiation.
- BBNF should consult the WDEQ's Guideline #24 Naturally Occurring Radioactive Material Management in Wyoming.
- Rare earth element concentrations need to be kept away from the public.
- Will local municipalities receive routine training and adequate equipment to respond to accidental releases of ore material and/or chemicals used in ore processing?
- The draft Emergency Response Plan needs to include hazardous spills along highways and rail lines.
- The security at the mine, tailings site, hydromet plant, haul roads, and PUG plant must be detailed and show how RER intends to protect radioactive materials.
- Chopped up gravel and large boulders have different chemical and radiation risk to the environment, in air and water and soil.
- There is no differentiation made between the overburden and the tailings for long term & permanent placement on Section 16.
- What engineering controls are proposed to prevent contamination of drinking water sources by naturally occurring radioactive material (NORM) in mine ore and ore concentrate?
- When will details of the environmental monitoring program looking at radiological issues and impacts from rare earth element recovery be available?

- Who specifically is the lead agency to monitor the safety precautions of this project in all phases for 43 years?
- What are the penalties for failure to abide by any regulations?
- What is the penalty for adverse health impacts to humans and/or wildlife including birds, insects, and plants?
- RER will need to provide its own hazardous response equipment for its property on site, and any specialized type of equipment necessary in conjunction with the Forest Service and County.
- Incorporate and consider the following report as a starting point in understanding environmental risk for the Bear lodge Project: Paul, J., & Campbell, G. (2011). Investigating rare earth element mine development in EPA region 8 and potential environmental impacts (908R11003). U.S. Environmental Protection Agency. 35pp.
- A rare earth processing plant in Malaysia has been linked to increases in Leukemia. What steps will be taken to assure that this will not be the case in Upton, Wyoming?
- What additional human health and environmental protection actions will be implemented to reduce the potential of radiological impacts to the air, soil, and surface and groundwater at the mine site, along the access routes, and at the Hydromet plant?
- What agencies or organizations will be trained to deal with hazardous spills?
- What chemicals will be used in the processing of the ore? How safe are these chemicals for workers and for the nearby towns? Where will the chemicals be stored? How will they be handled?
- Radiation should be monitored and, if any radioactive constituent is higher than recommended for human health by any agency, the area should be treated to deter human and wildlife entry.
- The area should be permanently posted to deter human entry and permanently fenced to deter the entry of wildlife, including birds that may be eaten by people.
- Materials and chemicals need to be properly contained and protected from accidental spillage should a sizable seismic event occur.
- Mitigation should include complete removal of waste rock, PUG plant, and tailings and returning the site to its original, pre-exploration condition.
- Will the water, soil, air, and other environmental issues be monitored and corrected? What is the timeline? Who will do this monitoring and correction?
- Is there a process where citizens may monitor the effects of this project?
- Radiation should be monitored and, if any radioactive constituent is higher than recommended for human health by any agency, the area should be treated to deter human and wildlife entry.
- Due to the expected radioactive nature of mine materials, monitoring should be at least 500 years.

4.5.10 Reclamation

- At reclamation, the upper reaches of Beaver Creek should look like a forest perennial stream.
- Water diversion and containment structures should look natural.
- Reclamation and mitigation should be completed in a timely fashion and ramifications of failure to do so should be clear.
- Include standards for reclaimed areas such as: specifications on plant species, timeframes for meeting criteria and contingency plans for unexpected drought, moisture or other events such as fire.
- Reclamation should be done using the safest methods possible so a superfund site is not left.
- Reclamation of the mine pit should include filling it, mitigating groundwater impacts, and long-term monitoring.
- The site should be returned to its original, pre-exploration condition including complete removal of waste rock.
- The pit lake (i.e. water contamination etc.) poses a human and wildlife safety hazard (exposure to toxic chemicals).
- Reclamation should include a weed control/prevention plan and appropriate topsoil handling/storage practices along with shrub and tree plantings.
- Once reclamation is complete, the exploration, mining, tailings, waste rock, PUG plant, and hydromet plant sites should be returned to their pre-mining uses.
- Reclamation plans should include clearly labeled maps.
- What are the site rehabilitation plans for the mine site, the haul roads and the processing plant?
- Can the pit lake be stocked with fish and used for recreation?
- Replant with trees and bushes, not just seeds.
- The exact chain of command for reclamation fifty years in the future should be clearly described.
- The reclamation plan should have an implementation time table relative to foreseeable mine activities.
- How will any remaining materials in any evaporation ponds be treated?
- Please discuss aquifer restoration and recharge methods and their effectiveness.
- If the pit is not to be reclaimed, an application must be filed to leave the pit. The facility that is to be left must have a beneficial use.

- Impermeable thick layers are needed when dealing with radioactive elements.
- Is there a proven reclamation plan that can be used to contain all of these radioactive materials, especially the Rare Earth elements?
- What is the life of the reclamation plan given the extremely long half-lives of radioactive materials?
- Reclaiming the pit is not a physical impossibility, but it will require funds. Much larger reclamation goes on every day in the Thunder Basin coal business. If a bond for reclamation is required then the job would get done and superfund toxic pit lake would be avoided.
- If a pit lake is deemed an acceptable closure measure at this location, the pond should contain usable water for grazing allotments or other needs in drought conditions and not simply be a flooded mine pit.
- The site should be graded in such ways as to promote stable slopes, revegetation, and minimal exposed substrate. The project site should not release constituents of concern (or pollutants in general), beyond what is currently released (background level).
- The reclamation goals & reclamation bonding must be adequate.

4.5.11 Recreation

- In the winter season a traditional 5-strand barbed wire fence may become buried by snowfall and would not adequately prevent snowmobilers from inadvertently venturing into the mine area while riding off-trail.
- A 6-foot chain link fence should be constructed around the mine and waste rock facility, instead of a 5-strand barbed wire fence, to prevent dangerous trespass into this area and more properly manage public safety.
- Please consider ways to stagger the impacts over the life of the mine so all of the roads are not taken out of public use at one time.
- Alternatives should analyze and disclose potential impacts associated with establishing a new winter trailhead along this corridor
- Consider prohibiting road plowing in the exploration area from December 15 until April 1.
- The final operations plan should consider a ban on parking/unloading along the travel corridor during the winter season.
- Important to maintain good sight distances and flat approaches to roadway from trail along with all other appropriate safety considerations for snowmobilers and vehicles traveling on, across or along this roadway.
- A permanent Forest Service toilet is currently located where the winter safety shelter is placed and both will be displaced therefore, a suitable alternate location for both should be found.

- Relocation of trail A may need to be considered to create a better buffer between mine activities and recreation activities.
- Former state lands should be incorporated into the Forest after reclamation.
- Mitigation should be required for direct and indirect impacts to acreage, wildlife habitat and outdoor recreation activities, including hunting.
- Snowmobile Trails A and E will be impacted by the project's access road. Construction of alternative off-road trail mutes will be critical for continued trail system viability.
- Relocate affected portions of snowmobile trails A, E and F.
- Consider relocation of the snowmobile trail system outside the Bearlodge Mountains to maintain long-term snowmobile trail management.
- Provide room for continued safe passage of all over-snow vehicles (groomer and snowmobiles) along this route in the event the new chain link fence changes/increases drift patterns along this mute.
- All affected motorized trails within and directly adjacent to the PUG and mine operation areas should be relocated to ensure continued safe public access along with continued proper trail traffic circulation patterns.

4.5.12 Seismic

- What happened to the sign in the middle of the proposed project area that stated blasting could not occur within 1-mile?
- Will blasting impact or disturb items or substances contained within Warren Peak?
- What action plan will be implemented if the Warren Peak containment is disturbed?
- What baseline data has been collected for seismic activity?
- The PM-1 site restricted area should be excluded from the project area, and identify what precautions/limitations, should be considered to mitigate any potential impact of the mining on the PM-1 site.
- Mitigate and address impacts caused by blasting operations, including warning signals and signs, permit conditions that prevent blasting in windy conditions or when soil conditions are too wet, and emergency response plans.
- The AF needs to be able to access its two off-site monitoring wells located in the Beaver Creek drainage SE of the open pit.
- What methods may be used to stay within ground vibrations limits, including test blasts, to determine blast design variables, such as delays, charge weight per delay, and total charge weight.

- Identify, evaluate, and/or recommend requirements, including locations, for measuring and recording the ground vibration caused by blasting as measured with a seismograph.

4.5.13 Visual Quality

- Reduce visual impacts with directional lighting, sculpting the waste rock piles, backfilling the pit as it is finished or some sort of landscaping on a grand scale.
- Buildings should be only as high as necessary, with roofing material in neutral earth-tones.

4.5.14 Water

- When will the comprehensive pit lake water quality study be finalized?
- Will water from the PUG plant and minable pit be treated? If so, what treatments are proposed?
- Comprehensive “hydrologic pumping tests” need to be completed, analyzed and incorporated into the EIS.
- The catch basins need to be designed for a 24 hour 100 year flood event.
- Sediment ponds should be designed for a 500-year flood event.
- Design the proposed mine site, waste rock, tailings, ponds, PUG plant, and hydromet plant operation and drainage systems to catch all potentially damaging constituents, include lining ponds with multiple layers of proven impervious material and covering tailings.
- Surface water containment from the mine and waste rock area appear insufficient. Snow melt, when combined with a rain event can produce large amounts of run-off. How will that be contained?
- The creeks and ponds are still somewhat frozen when melt-water begins to run. Is there a plan for frozen settlement pond mitigation?
- Who will enforce silt removal from settling ponds during the mining process?
- What happens after the mine is no longer active?
- Who is responsible for the long-term leaching from the stockpiles?
- Water usage, tailings storage, and the post-project condition of the Upton site are issues that should also be considered in the Bear Lodge Mine Hydrology and Hydraulics Plan as well as the calculation of the reclamation bond(s) with the USFS and applicable state agency.
- What measures are proposed to prevent well MW-16 from being contaminated by water discharged from the dewatering pond?
- Who will be held responsible when water contamination occurs
- Will the monitoring program look at acid drainage?

- How will this project impact surface water flows, and what will be done to mitigate any impacts?
- The Forest Service will need to protect and regulate all water usage.
- Monitoring stations for water quality and quantity should be established for baseline monitoring of water quality and quantity to compare with elevated levels of toxicity and hazardous substances.
- Why have there been no permits obtained from the Wyoming State Engineers office for the holding tanks?
- Protect each watershed and the fisheries.
- Replace wetlands and riparian areas.
- Minimize erosion and control stormwater runoff.
- Use the EPA's BMPs for mining facilities.
- Mitigate the impacts of the mine pit being located in the middle of the headwaters to Whitlaw Creek.
- Exploration drill holes should be properly cased and filled to prevent surface disturbance, surface water intrusion, or groundwater migration either vertically or horizontally.
- Wetlands and other waters should be delineated in accordance with the Corps of Engineers Wetland Delineation Manual and current Regional Supplement: Western Mountains, Valleys and Coast Region.
- Identifying locations and boundaries of wetlands using the National Wetlands Inventory (NWI) or other off-site mapping techniques can be unreliable and misleading when defining limits of waters of the United States.
- More monitoring sites are needed for additional air, surface and ground water testing. Sites are needed for testing of the chemical and radiological characteristics of exposed waste rock, the "fake lake" sides and tailings.
- Testing for minerals alone is not sufficient, speciation testing on identified pollutants is also needed.
- What are the testing methods for radio-nuclides and will it be disclosed to the public?.
- What baseline water quality monitoring data on rare earth element concentrations in air or the soil/bedrock or surface water have been collected and what kind of standards are required?
- There should be at least a year's worth of testing data to design pollution containment and mitigation measures.
- A monitoring plan for the Hydromet Plant is needed to make sure any chemicals that could be potentially harmful don't come in contact with the drinking water supply of Upton and to ensure that the water in Iron Creek is not negatively impacted.

- More information is needed on the plan for monitoring the water quality in the project area and Upton hydromet plant.
- Who will be conducting the monitoring pre and post mining, thresholds, and action plans to deal with any hazardous spills.

4.5.15 Weeds

- Enter into a weed and pest plan with the Crook County Weed and Pest District.

4.5.16 Wildland Fire

- Use native grass seed for replanting and not fairway grass seeds & tall wheat grass seed.
- The emergency plan should include tornados and wildfire at the mine site, waste rock site, tailings site, PUG plant, and hydromet plant.
- Who will be responsible for fighting fire?
- RER will need to provide firefighting equipment for on-site, and any specialized type of equipment necessary for emergency services.

4.5.17 Wildlife, Fish, and Plants

- Waste rock pile needs to be fenced and netted to prevent wildlife from entering area.
- Keep wildlife out of the waste ponds, including birds, large mammals, and small animals.
- What provisions are being taken to protect local area water sources during migration seasons?
- What methods will be used to stop birds from landing in the Pit water?
- Create or leave bat winter caves.
- Don't bring in bat diseases from other mines/caves.
- Protect montane grasses in the exploration area.
- Monitor the effectiveness of mitigation for federally listed and sensitive species throughout project development.
- Limit disturbance to suitable habitat for federally listed or candidate species by staying on designated routes.
- Limit development of new access routes.
- Prohibit non-permitted access, using gates if necessary.
- Implement dust abatement practices near occupied habitat for threatened, endangered or plant species of concern.

- Implement a trash management plan to reduce scavenger predation on ground-nesting birds.
- Impacts on habitat for Birds of Conservation Concern (BCC) on the 2008 list should be mitigated.
- Survey the power line route prior to construction to identify nest locations.
- Surveys should be conducted to identify if the project overlaps critical avian habitats.
- Schedule activities to avoid breeding birds during the migratory bird-nesting season (Feb 1-August 30).
- Compensate for habitat loss by contributing to habitat enhancement in high-value habitat areas.
- Protect all raptors nests and minimize surface disturbance with timing and buffer restrictions based on the Black Hills National Forest Plan the Service's Wyoming Ecological Services Office Recommended Spatial and Seasonal Buffers for Breeding Raptors.
- Avoid development in areas of critical habitats due to their ecological value.
- The same quality of habitat and quantity of acreage lost should be sought to replace those lands affected, at a minimum ratio of 1:1, if the land is contiguous with existing NF lands. If the replacement lands are not of equal habitat quality and do not border existing NF lands, a higher replacement ratio should be sought as the value of the losses will exceed that of the replacement lands.
- Fences should be wildlife-friendly, and need to be more than 5-strand wire to keep wildlife out of the mine area.
- Require intermittent patches of soil in the pit terraces that could support bushes and native vines.
- Put aquatic life and fish in the pit lake.
- Remove, treat, and/or dispose of Radiation, rare earths, and other substances that may be harmful.

4.6 Suggested Alternatives

Under the NEPA process, the scoping comments will be used to help develop alternatives to be analyzed in the EIS. Not all alternatives suggested during scoping will be analyzed in the EIS. Comments include different methods for developing or conducting the mining, or methods and outcomes of reclamation (post mining use). These suggestions are different from the design and mitigation comments discussed above because they would result in a fundamental difference in the way the mining is conducted and would result in a significant change in the plan of operations as proposed. Not all alternatives suggested will be fully analyzed or discussed in the EIS.

4.6.1 Access Route

Alternatives to the proposed access route:

- Use the Warren Peak Road

- Use Warren Peak and Miller Creek roads
- Consider alternative routes for the proposed haul road.
- Consider haul road options within the northern portion of Section 20 immediately adjacent to the pit in Section 17.

4.6.2 Pit Reclamation

The current plan proposes to leave the mine pit at reclamation, allow it to refill with water after mining, and control access. Suggested alternatives for reclamation of the proposed mine pit included:

- If a pit lake is deemed acceptable, it should contain usable water for grazing allotments or other needs in drought conditions.
- Waste rock should be hauled back into the pit after mining is done and returned to a natural state.
- Filling the pit partially or fully with waste rock provides the best possible mitigation for long term environmental health. The State of California now requires all new mines to refill the open pit.
- Keep the pit above the water table.

4.6.3 Waste Rock Facility

The waste rock facility is planned to be located on privately owned land adjacent to National Forest and construction and use of the facility is proposed to divert Beaver Creek around the final waste rock facility. Alternatives to the locations for the waste rock facility were suggested so that Beaver Creek does not need to be diverted, or to reduce the perceived potential impacts on the watershed and waste rock radioactivity.

- Redesign the Waste Rock facility so Beaver Creek can remain in its channel while still protecting water quality.
- Since the waste rock pile will be 450 feet high (and is claimed not to be capable of acid leaching), this pit should be backfilled with the waste rock and reclaimed to natural contours.

4.6.4 PUG

The PUG is planned to be located on National Forest lands near the mine. Waste rock from the PUG would be hauled to the nearby waste rock storage facility. Alternative locations of the PUG would alter the use of the waste rock facility and hauling activities near the mine. Suggested alternatives included:

- The PUG plant at the mine site should be relocated closer to the processing plant in Upton.
- The Pug Mill should not be located over a flowing stream.

4.6.5 Other

The Corps of Engineers is a cooperating agency with decision-making requirements related to the Clean Water Act. The Corps stated that they are precluded from issuing a permit if there or other “less environmentally damaging practicable alternatives available”. The Corps suggested alternatives, but did

not explain why they believed these alternatives are less damaging. Their suggested alternatives include:

- No Action
- Phased Development with Interim Reclamation
- Alternate Waste Rock Storage Site(s)
- Full Development of Project Area

4.7 Effects Analysis and Issues

Comments identified as suggesting impacts analysis are summarized in this section. These comments have been phrased as questions to assist the resources analysts in identifying how they are going to answer the question in their analysis.

The Corps of Engineers requested specific resources be analyzed to meet their requirements. These include:

- Access,
- Air Quality,
- Economy,
- Grazing,
- Heritage/Tribal (cultural resources),
- Light and noise,
- Private Property,
- Public Health and Safety,
- Reclamation Plan,
- Recreation,
- Soils,
- Seismic,
- Special Land Use,
- Tourism,
- Visual,
- Water,
- Weeds,
- Wildland Fire,
- Wildlife, Fish, and Plants.

4.7.1 Access/Roads/Traffic

- The proposed access route is a school bus route.
- What is the impact on paved roads in local towns?
- How will private access off of the county road be affected by the use as a haul road?
- What are the impacts on roads from maintaining winter access (traffic, snowmobiles, fences damaged during snow removal)?
- What are the impacts on landowners and lease/permit holders along the proposed route?

4.7.2 Air Quality/Dust/Climate

- How will road construction and proposed road upgrades affect air quality?
- What will the climate change be to the area due to the change in topography of the mine?
- Will there be radioactive dust in the wind?
- Where will the dust from the blasting area disperse to?
- What are the impacts on air quality from the mine and plant on area residents and the environment in neighboring states?
- What will happen to dust caused by hauling from pit to PUG and from PUG to waste rock/low grade ore piles?
- What will be the impacts to Devils Tower air quality?
- What are the impacts on criteria pollutants and their appropriate NAAQS (i.e., ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead); Air quality-related values (AQRVs) in Class I and Sensitive Class II areas (e.g., visibility, deposition); and Prevention of Significant Deterioration (PSD) increments at potentially impacted Class I and sensitive Class II Areas?
- What are the greenhouse gas emissions, potential climate change impacts from construction, operation, and reclamation?
- How does the physical crushing and exposing of the rock material affect radiological and heavy metal dissolution, movement and accumulation?
- Does the increase in surface area of rock increase heavy metal and radiological concentrations to more dangerous levels?
- What air impacts have occurred from other rare earth mines and mills in the U.S. and abroad?

4.7.3 Economy

- Will there be economic benefit for Sundance and Upton, and local and state economy?
- What are the economic impacts on grazing permittees, including loss or impaired ability of grazing permittees to operate at full potential?
- What are the economic impacts on the FS or the timber industry?
- What are the effects on jobs, income, taxes (federal, state, and local), retail, restaurants?
- What are the impacts on school enrollment?
- Will there be impacts on property values?
- What are the costs, extra services?

4.7.4 Grazing

- How will wildlife and livestock be affected by increased radiation?
- What are effects of dust or the chemicals used to reduce dust to livestock and wildlife?
- What are the impacts on livestock grazing permittees and agricultural producers from the following:
 - areas fenced off from grazing,
 - changes in Animal Unit Months,
 - ground and surface water quality,
 - increased traffic and number of speeding vehicles,
 - cut fences, opened gates,
 - damaged range improvements,
 - dust impacts to forage resources and animal health,
 - open mine areas,
 - unsuccessful reclamation of disturbed areas,
 - noxious weeds, and other detrimental impacts?
- Is there a danger to livestock grazing and drinking adjacent and downstream to the mine area from metal and rare earth element contamination?

4.7.5 Heritage/Tribal

- What are the impacts on cultural resources of the park?
- What are the impacts of the widening of roads, land disturbance on cultural resources?
- What are the impacts on continued Native American religious and cultural practices (prayer offerings (bundles and cloths), sweatlodge ceremonies, vision quests, funerals)?
- What are the impacts on the historical and cultural significance of Mato Tipila (Devils Tower)?
- Will the DEIS include detailed mitigation information to insure that current air quality is maintained as it relates to Devil's Tower?
- Is this project a violation of the 1868 Fort Laramie Treaty of the Mandan, Hidatsa, and Arikara Nations? Any federal agency or its employees not complying with the provisions of the 1868 Fort Laramie Treaty are also violating the U.S. Constitution and the federal law, the March 3rd Act of 1871.

- How and to what extent will proposed mine operations impact the tribal community (in particular, the over 20 different tribes with cultural, historical, and/or geographical ties to nearby Devil's Tower) or subsistence resources, including tourism?
- Is the Upton site compliant with the NHPA?

4.7.6 Light and Noise

- What will be the impacts on Devils Tower and Inyan Kara?
- What are the impacts of noise on private property?
- What are the impacts of lighting on the naturally dark skies of Devils Tower from sky glow (also known as artificial sky glow, light domes, or fugitive light), and the current light pollution ratio (LPR) of .13?

4.7.7 Private Property

- How will mag water spray getting into streams affect our property?
- What is the effect on private property from additional easement requirements?
- What impact will more traffic from both the public and RER haul/supply trucks have on the quality of life of nearby landowners?

4.7.8 Public Health and Safety

- Will the radioactivity pose a human health risk?
- What is the impact on safety from the hauling traffic and the employee traffic?
- What are the cumulative impacts on the nuclear disposal problem?
- What hazard is there in transporting the radioactive waste?
- What are the impacts on those who live downstream and downwind from the processing plant?
- What is the risk from the Sundance PM-1 Reactor Site?
- What is considered a safe level of radiation? Is there a radiation dose low enough that could not cause cancer?
- What increased radiation levels will Forest users be exposed to adjacent to the mine area?
- How much time would one have to spend in the area for a significant dose to be received?

4.7.9 Reclamation Plan

- Will stockpiling the soil over years lead to loss of valuable nutrients, which will impact the eventual reclamation?

- Will storing stockpiles within the waste rock facility and PUG plant area cause contamination, which will make this soil inadequate for future reclamation?
- What bonding and precautions are in place to assure that the company and its investors will bear the costs of cleanup for mines and plants?

4.7.10 Recreation

- How will road construction and proposed road upgrades affect recreation and access to the areas?
- What is the effect of the loss of motorized roads, bike trails, snowmobile trails, etc.?
- What is the impact from mining and traffic on big game and turkey hunter use and experience on public lands?
- Will the mine put hunting pressure on other publically accessible USFS lands?
- What is the effect on off-road recreational vehicle (ORV) trail riding?
- What is the effect on the portable Bearlodge Safety Shelter, provided and used by snowmobilers?
- What non-motorized recreation trails will be displaced or impacted?
- How will plowing the Miller Creek Road affect crossing of snowmobile trails?
- How will winter exploration operations impact snowmobiling opportunities?
- What are the impacts on the Cook Lake Recreation Area, a public swimming, fishing and camping area?
- What are the impacts on bird watching, nature study, and photography?
- What are the impacts from the recent transfer of State of Wyoming lands to private lands within the project area?

4.7.11 Soil

- What are the impacts on soil from all the haul trucks, heavy equipment, and dust with rare elements falling from the trucks?

4.7.12 Seismic/Stability

- What are the impacts to soil resources including the potential for erosion and for topsoil degradation or loss during mining and stockpiling?
- What is the risk from exploration, mining or blasting on the PM-1 Site?
- What effect will blasting have on springs and wells out to a 10 mile radius, especially as the pit reaches 500 feet?

- What effect will blasting have on landslides and roads?
- Will blasting spread the unnaturally high natural radiation?

4.7.13 Special Land Use

- What are the impacts on proposed RNAs?
- What are the impacts on the Nature Conservancies special designation in the Bearlodge area?
- What are the impacts on all management areas from exploration?

4.7.14 Tourism

- What is the impact of the project on tourism?
- What are the impacts on tourism from destruction of the landscape surrounding the Monument?

4.7.15 Visual

- What are the visual impacts of 640 acres of waste rock piled to an approximate elevation of 6200'; or processing plants that are 80' in height, mine, waste rock facility, PUG mill, the new roads, power line, and/or the plant at Upton?
- What are the visual impacts from piles of unconsolidated gravel, night lighting and building heights?
- How much of the resulting visual issues will be visible from elsewhere (1-90, Crow Peak, Warren Peak, Devils Tower, Inyan Kara, Wyoming Welcome Center etc) during the mining period?

4.7.16 Water

- What are the cumulative impacts from degradation of Whitelaw Creek in the 1980s due to eroded stream banks, high sediment loads and the impact this mine will have on this and other streams recoveries?
- What are the cumulative impacts on aquifers from quarry mining, Oneok's NGL pipeline, and the RER project?
- How will road construction and proposed road upgrades affect water quality?
- Will the post mine water quality and quantity (including the pit lake) meet post mine land uses for wildlife habitat?
- Will the water sources in the Belle Fourche, Cheyenne, and Missouri rivers be at risk?
- Will the Madison Aquifer be at risk from refill of the pit?
- What will the water withdrawal and pit dewatering proposal affect?
- Will the streamflow be reduced by this withdrawal and will it be mitigated?

- Will the two district wells located at Reuter Springs be contaminated or will water availability be affected?
- Will the spring fed hydrology of both Whitelaw Creek and Beaver Creek or aquifer recharge be disrupted by use of the well for the mine or the deep pit excavation?
- Will the change in the chemical, physical and biological nature of water stored in retaining ponds affect the surface flow of the stream system?
- Will senior water right holders be adversely affected?
- What potential is there for water and air contamination from the massive stockpile of overburden?
- What effect will the underdrain water collection systems and the diversion channel have on Beaver Creek?
- Will groundwater be contaminated?
- How will flooding impact exploration, the mine site, waste rock site, PUG plant, tailings site and hydromet plant site?
- What will the impacts be on household, livestock, and municipal water resources?
- What is the nature of groundwater movement in the proposed exploration areas, mine site, waste rock site, and hydromet plant?
- What will be the mineral content, radioactive characteristics, acidity, source aquifer and chemical content be for the process water?
- What is the recharge rate for the source aquifer?
- Will more exploratory drilling dry up the whole central core of the Bearlodge or impact water quality or quantity?
- Will flooding cause contamination to flow into the Redwater and from there into the Belle Fourche River?
- Will flooding cause the pit dewatering ponds contaminated by heavy metals to flow into the groundwater, surface water or well?
- Will water released into drainage be radioactive?
- What is the linkage of groundwater and surface water and what are potential impacts to both?
- What effect will the pit lake have on groundwater hydrology or groundwater quality?
- Will arsenic, radioactive materials or other constituents concentrate in a post-mining impoundment?

- Does leaving the pit in place fit the Forest Service's mandate that all mining activities "be conducted in a manner that minimizes adverse environmental impacts on National Forest surface resources" (36 CFR part 228.8)?
- What are the impacts related to waste handling and disposal?
- Maps of groundwater, surface water, springs and wetland resources in the area are needed.
- Will groundwater drawdown affect the nearby Formerly Used Defense Site (FUDS) by creating a pressure gradient that draws groundwater away from it?
- What is the expected volume and rate of groundwater pumping that will occur and the resultant cone of depression?
- What does the comprehensive groundwater flow model indicate for surface and groundwater monitoring locations and conditions through mine closure?
- What did geochemical testing indicate about the likelihood that waste rocks and tailings will generate acid or metals?
- What are the impacts from de-icing and dust suppression agents on the Belle Fourche River Watershed TMDL?
- What are the impacts of using MW-16 as a supply well when it was originally completed as a 'Monitoring Well'?
- Are any impacts to neighboring private wells anticipated?
- Will the proposed Beaver Creek diversion ditch waters be subject to Clean Water Act regulations?
- What are the acid or alkaline drainage potentials of this mine?
- What is the potential for heavy metal or other chemical drainage accumulation in the waters of Lytle Creek, Beaver Creek and Whitelaw Creek?
- What effluents will be discharged out of settling ponds and into Beaver Creek watershed?
- What is the contaminant leaching potential of this mine project? What contaminants could potentially enter the water, air and soil from this mine project?
- What will happen to any deep rooted tree, shrub, forb or grass species once the roots penetrate topsoil and attempts to grow in the waste rock pile?
- What is the pit lake water quality?
- Is the waste water disposal plan adequate?
- What impact will use of groundwater have on the surrounding area, including Bear Lodge and adjacent aquifers?

- Will the Sundance Municipal water supply be protected?
- Well "MW-16" is downhill from a settling pond. Does this increase chances for contamination of subsurface water?
- Will groundwater hydrology around the Warren Peak area be impacted by the proposed mining project?
- Will the Waste Rock Facility and Low Grade Ore Stockpile area have the potential for soil contamination where a foundation is not in place?
- Is the water source of well MW-16 a confined aquifer or the water table? If it is the water table, could this well dewater the surrounding area and actually lead to water flooding the mine pit once it is dug deeper than the elevation of the water source tapped by the well?
- Will the diversion channels and their discharge into Beaver Creek, Whitelaw Creek, and other neighboring channels affect downstream appropriators?
- What are the impacts on the Belle Fourche Watershed from the use of groundwater and discharges into Beaver Creek and Whitelaw Creek?
- Will the transportation of pre-concentrate from Crook to Weston County negatively impact tributaries of the Belle Fourche by adding to erosion and runoff?
- What are the assimilative capacity issues with Wyoming pollution drifting down to SD Rivers, who may be in non-attainment for values?
- Are streams currently supporting beneficial uses? Will material coming out of tailings piles be point source pollution?
- What are the impacts on ground and surface water quality and quantity, riparian areas, lakes, ponds, springs, seeps, and wetlands?
- What volume of groundwater will be used and what are the impacts on watershed(s)?
- Have the tailings at the mine site, PUG plant site, waste rock pile area, and hydromet plant been characterized, including their mobility and ability to bioaccumulate, percentage of each rare earth and radiological characteristics?

4.7.17 Weeds

- Will weeds be introduced from the trucks carrying the pods and seeds?
- What are the impacts of the widening of roads on weeds?

4.7.18 Wildland Fire

- Will the high voltage line start fires?

4.7.19 Wildlife, Fish, and Plants

- Could radon gas be dangerous to small animals that attempt to use confined spaces within the waste rock pile as shelter?
- How will road construction and proposed road upgrades affect fish and wildlife and natural springs and dams?
- How will the disruption affect wildlife and the domestic animals during the spring and summer?
- What are the impacts on fauna from the release of radioactive water?
- Will birds be protected from contaminated water at the mine site?
- Could storage pits overflow and pollute miles of habitat?
- Will road affect wildlife habitat, the topography, the trees?
- Will the increase in traffic increase pine beetle infestation?
- Will the high walls cause a danger to wildlife and humans?
- Will wildlife and/or humans be able to safely traverse the high walls leading to the pit lake?
- Will the revegetation be effective?
- What will be the effects on the greater sage-grouse within a two mile radius of the Upton facility footprint and northern long-eared bat?
- What will the impacts be on avian species and their habitat (including black-backed woodpecker and Arctic three-toed woodpecker, raptors)?
- What will the impacts be on plants, specifically the Moonwort Fern?
- What will the effects of chemicals be on insect life and consequently birds and local wildlife?
- What are the impacts from wildlife habitat fragmentation?
- Will the loss of habitat threaten vulnerable species which could lead to endangered species status?
- What critical wildlife habitat will be lost such as high elevation meadows, ponderosa pine and aspen forests and riparian areas?
- What are the impacts on wildlife from artificial lighting and noise from frequent truck traffic and the use of explosives?
- What is the risk to flora and fauna from exposure to radioactive elements such as thorium and uranium?

- What are the impacts to wildlife, including migratory and resident birds, through their consumption and use of impaired water in the proposed pit lake?
- What is the impact on big game migration routes and the ranges of several Tier I and Tier II non-game species as identified in the WGFD 2010 State Wildlife Action Plan?
- How will fencing affect daily and seasonal movements of big game animals and other wildlife species?
- How will overhead power line construction, right-of-way maintenance, and long-term placement of these facilities on the landscape affect avian and terrestrial species?
- What are the impacts of road mortality and habitat loss for smooth green snakes and Black Hills red-bellied snakes?
- What are the impacts on birds and small animals from the tailings mixing with the runoff?
- Will heavy metals accumulate in plants and/or animals?
- Are there any state or federally listed species (or species of concern) present in or near the project area?
- Are there any critical habitat designations in or near the project area?
- Will habitat security be lost in winter from plowed winter roads?
- What are impacts of dust or chemicals to reduce dust on wildlife?
- Will rare native plants recover?
- Are there cumulative effects from all the burned areas or Mountain Pine Beetle kill areas on habitat for Black Backed Woodpecker?
- What are the effects on the density of large snags and associated species?
- What is the impact on federal and state-listed wildlife species that use Devils Tower NM for some or all of their lives?
- What are the impacts of radioactivity on birds and wildlife, including each rare earth and process chemicals and bioaccumulation?

APPENDIX A SCOPING LETTER



United States
Department of
Agriculture

Forest
Service

Black Hills National Forest
Bearlodge Ranger District

101 S 21st Street, PO Box 680
Sundance WY 82729-0680
307-283-1361

File Code: 2800/1950

Date: March 20, 2014

Dear Interested Party:

The Black Hills National Forest has received a Plan of Operations for the proposed construction and operation of a rare earth elements mine from Rare Element Resources, Inc. The mine would be located in the Black Hill National Forest in Crouk County, Wyoming. Consequently, the Bearlodge Ranger District will evaluate the proposal in an environmental impact statement (EIS) in compliance with the National Environmental Policy Act (NEPA).

Public Scoping

The initial stage of the NEPA process includes public scoping to obtain comments and input regarding the project proposal and information that should be used in the analysis. As part of this scoping process, the Bearlodge Ranger District will host two public open houses to provide information on the proposed project and how the public can submit comments. Representatives from the Forest Service and Rare Element Resources will be available to answer questions. These meetings are scheduled for:

- 6:30 to 8:30 pm, April 14, 2014 in Sundance, WY at the Crouk County Court House, Community Room, 309 Cleveland St.; and
- 6:30 to 8:30 pm, April 15, 2014 in Upton, WY at the Upton Community Center, 917 N Hwy 116.

What is being proposed?

The proposal is for the Forest Service to approve the Plan of Operations submitted by Rare Element Resources with additional mitigation (if needed). Design features will be developed through the NEPA analysis to reduce impacts or modify the project to comply with laws, regulations and policies.

Why is this project proposed?

Rare Elements Resources, Inc. has a statutory right to extract locatable minerals (rare earth elements) as proposed in accordance with the General Mining Law of 1872, as amended (30 U.S.C. 21–54). The Forest Service has the responsibility to protect surface resources of National Forest System lands to the extent practicable. Forest Service mining regulations state that, "operations shall be conducted so as, where feasible, to minimize adverse impacts on NFS surface resources (36 CFR 228.8).

The Black Hills National Forest Supervisor will decide whether the proposed action will proceed as proposed or as modified by an alternative. Also, the Forest Supervisor will decide which mitigation measures and monitoring requirements will be applied, and whether a Forest Plan Amendment is required.

Purpose and Need

Rare Element Resources, Inc. has developed and submitted a Plan of Operations for a rare earth elements mining operation to the Forest Service. The Forest Service is obligated to process, administer, and manage mining operations conducted on NFS land under the authorities of laws and regulations that confer right to go upon and use open public domain land. Forest Service regulations at 36 CFR 228 set forth rules and procedures for management of mining-related activity on NFS land to minimize adverse environmental impacts on surface resources.



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Project Location

The Bear Lodge Project is located approximately 12 miles (or 6 air miles) north of Sundance, Wyoming. The mine area is approximately 1,700 acres; consisting of 1,060 acres of NFS lands and 640 acres of private lands. The project is located Townships 51 and 52 North, Ranges 63 and 64 West. The project location is shown on **Figure 1**.

Project Summary

The proposed project will contain several components. Locations of these facilities and exploration are shown on **Figure 2**. Additional details on the project Plan of Operations is available at the Forest Service website: <http://www.fs.usda.gov/projects/blackhills/landmanagement/projects>.

Bull Hill Mine

An open pit mine, physical upgrade (PUG) plant, and other mine facilities are located at Bull Hill on National Forest System (NFS) lands and on adjacent private lands. The proposed mine area is approximately 1,700 acres; about 1,060 acres of NFS lands and 640 acres of private lands. At Bull Hill, Rare Element Resources would construct a 232-acre open pit mine to access and remove rare earths mineral bearing ores. At the mine site, materials will be crushed, sorted, stored and shipped to the Upton, Wyoming processing facility, approximately 45 miles away. Construction of the mine facilities will remove 8.7 miles of existing NFS roads. New roads will be construction and existing roads upgraded to accommodate hauling materials from the pit to the physical upgrade plant, to storage facilities, and to Upton for further processing.

Access and Power

Miller Creek Road would provide the main access to and from the mine area (County Roads 208, 266 and 8 and Forest Service System Roads 854 and 851). This 13-mile access route would be upgraded to accommodate two-way driving traffic. The mining traffic is estimated between 13 to 17 round trips of semi-trucks of processed ore material each day during operation. This estimate does not include worker traffic or delivery supply vehicles.

A 69 kilovolt (kV) transmission line would be constructed above ground to provide electricity to the mine area. Approximately 1.5 miles of the power line would cross NFS lands, while the remainder would be on private and State of Wyoming lands.

Continued mineral exploration activities are proposed during the next 43 years while mining activities continue. Up to 2,000 drill holes are proposed over the life of the mine, with a maximum of 48 drill holes annually. Approximately 20,000 feet of trenching may be completed over the life of mine. Before each exploration season, RER will provide the Forest Service with a Work Plan identifying the drilling locations and areas of disturbance.

Mine Closure and Reclamation

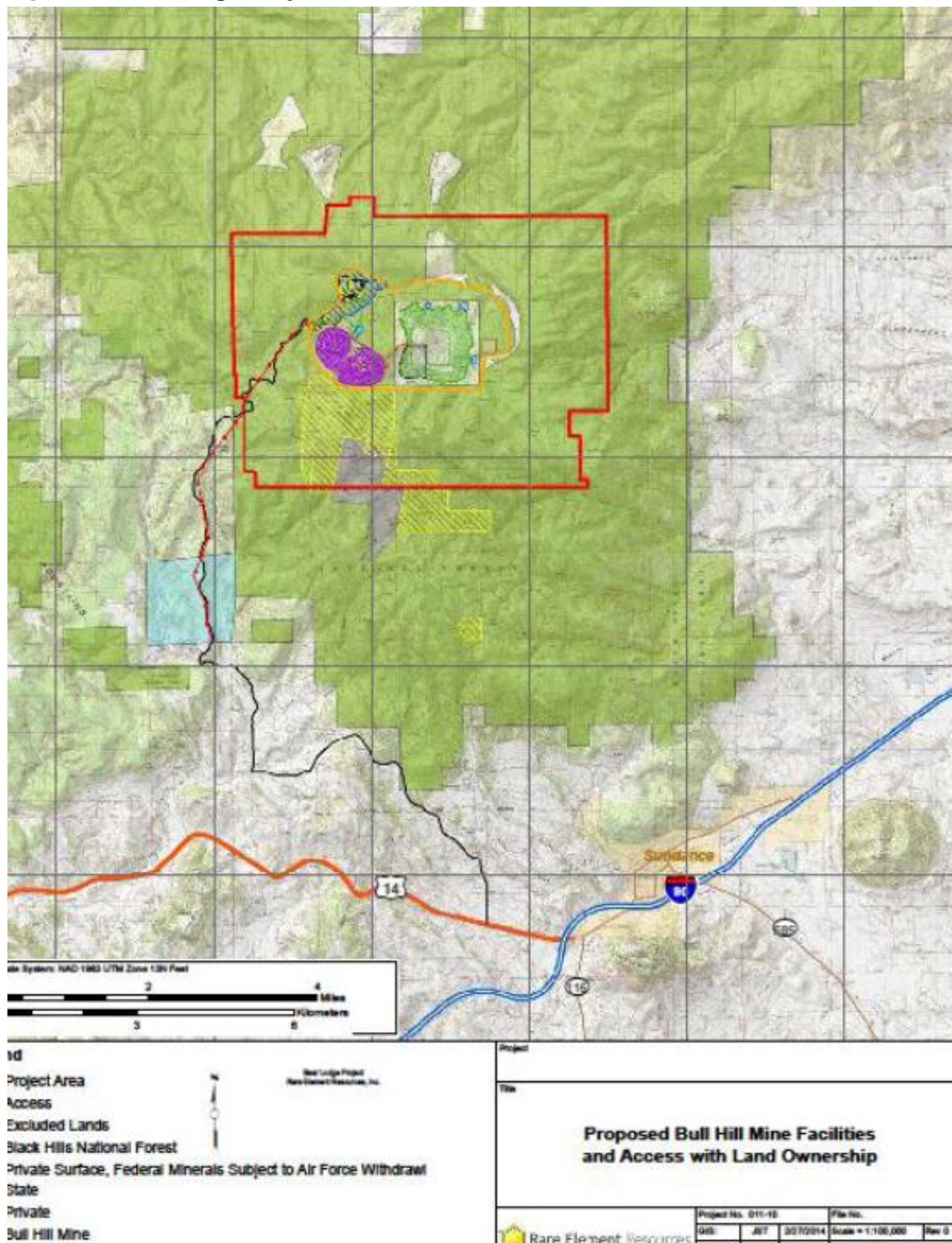
The plan of operations also includes mine closure and reclamation at the end of the mine life.

Connected Action - Hydrometallurgical Plant at Upton, Wyoming

Once the ore has been physically processed at the mine, the mineral concentrate will be transported to private land in Upton for final chemical processing and recovery of the rare earth elements.

National Historic Preservation Act

The Black Hills National Forest is inviting public comment at this time pursuant to the National Historic Preservation Act (NHPA) regarding potential effects the proposed action may have on historic properties. An historic properties effects analysis will be completed for this project as per the NHPA implementing regulations found at 36 CFR part 800. Any individuals or parties that wish to provide comments or input that would help the federal government make more informed decisions regarding historic properties are invited to do so.

Figure 1. Bear Lodge Project Location

APPENDIX B

PROJECT DESCRIPTION

Bear Lodge Project

Black Hills National Forest, Bearlodge Ranger District

Detailed Project Description

Below is a detailed summary of the Plan of Operations, as modified in February 2014, submitted by Rare Element Resources to be considered in the Bear Lodge Project Environmental Impact Statement. The Plan of Operations and other information on this project are available online at <http://tinyurl.com/BearlodgeMineProject>

Project Location

The Bear Lodge project is located approximately 12 miles (or 6 air miles) north of Sundance (Figure 1). The mine area is approximately 1,700 acres; consisting of 1,060 acres of NFS lands and 640 acres of private lands.

Proposed Action

The project is located on Forest Service lands on portions or all of the following:

Bull Hill Mine and Facilities

Federal: Forest Service: Portions or all of the following: Sections 8, 9, 10, 15, 17, 18, 19, 20, and 21, Township 52 North, Range 63 West, 6th principal meridian (PM).

Private: Portions or all of the following: Sections 16, Township 52 North, Range 63 West, 6th PM.

Miller Creek Access Route

Federal: Forest Service: Portions of the following: Sections 18 and 19, Township 52 North, Range 63 West, Section 9, Township 51 North, Range 63 West, 6th PM.

State of Wyoming: Portions of Section 36, Township 52 North, Range 64 West, 6th PM.

Private: Portions of the following: Sections 24 and 25, Township 52 North, Range 64 West, Section 1, Township 51 North, Range 64 West, and Sections 6, 7, 8, 9, 16, and 21, Township 51 North, Range 63 West, 6th PM.

Power Line

Federal: Forest Service: Portions of the following: Sections 8, 17, 18, and 19, Township 52 North, Range 63 West, 6th PM.

State of Wyoming: Portions of Section 36, Township 52 North, Range 64 West, 6th PM.

Private: Portions of the following: Sections 24 and 25, Township 52 North, Range 64 West, 6th PM.

Exploration Activities

Federal: Forest Service: Portions or all of the following: Sections 5, 7, 8, 9, 10, 11, 14, 15, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29 and 30, Township 52 North, Range 63 West, 6th PM.

Private: Portions or all of the following: Sections 16, Township 52 North, Range 63 West, 6th PM.



Bull Hill in 2011

Project DescriptionBear Lodge Project EIS

Connected Action***Upton Plant Site***

The Upton Plant Site includes portions of Sections 28, 29, 32, and 33, Township 48 North, Range 65 West, 6th PM.

Purpose and Need for Action

The purpose of this project is to allow a statutory right, in accordance with the General Mining Law of 1872, as amended, of Rare Element Resources, Inc to develop a mine on federally administered lands in a manner consistent with other federal laws and regulations and the 1997 Revised Land and Resource Management Plan for the Black Hills National Forest, as Amended by the Phase II Amendment (Forest Plan). Forest Service surface management regulations (36 Code of Federal Regulations [CFR] part 228) require that all mining activities “be conducted in a manner that minimizes adverse environmental impacts on National Forest surface resources” (36 CFR part 228.8). The Forest Service is therefore required to ensure that the Proposed Action is evaluated in accordance to the National Environmental Policy Act and 36 CFR part 228.

The proposed mine development is needed to provide a supply of rare earth elements to support today’s evolving technologies. Rare earth elements are the technology metals, used in cell phones, TVs, lasers, and wind turbines. The proposed exploration activities are needed in order to continue evaluating the area for geological resources and possible expansion of the mine in the future.

Current and Historic Uses within the Project Area

The Forest Service manages the National Forest System lands associated with the project under the 1997 Phase II Amendment of the Land and Resource Management Plan (Forest Plan) for a variety of multiple resource uses, including mineral activities.

For the past 40 years, several mining companies have conducted mineral exploration activities, such as drilling and trenching within the Warren Peak area, including around Bull Hill. The recent rare earth exploration activities began in 2004 with a small project. It expanded in 2009 to further define and develop the rare earth deposit.

In addition to mineral resource activities, the area has been primarily managed for timber, range, and recreational activities. Several timber projects; Burner, Togus, and Slez, are included in the analysis area and about 5 miles of winter snowmobile trails overlap the Bear Lodge Project area. Cattle grazing is also a common use for the area.

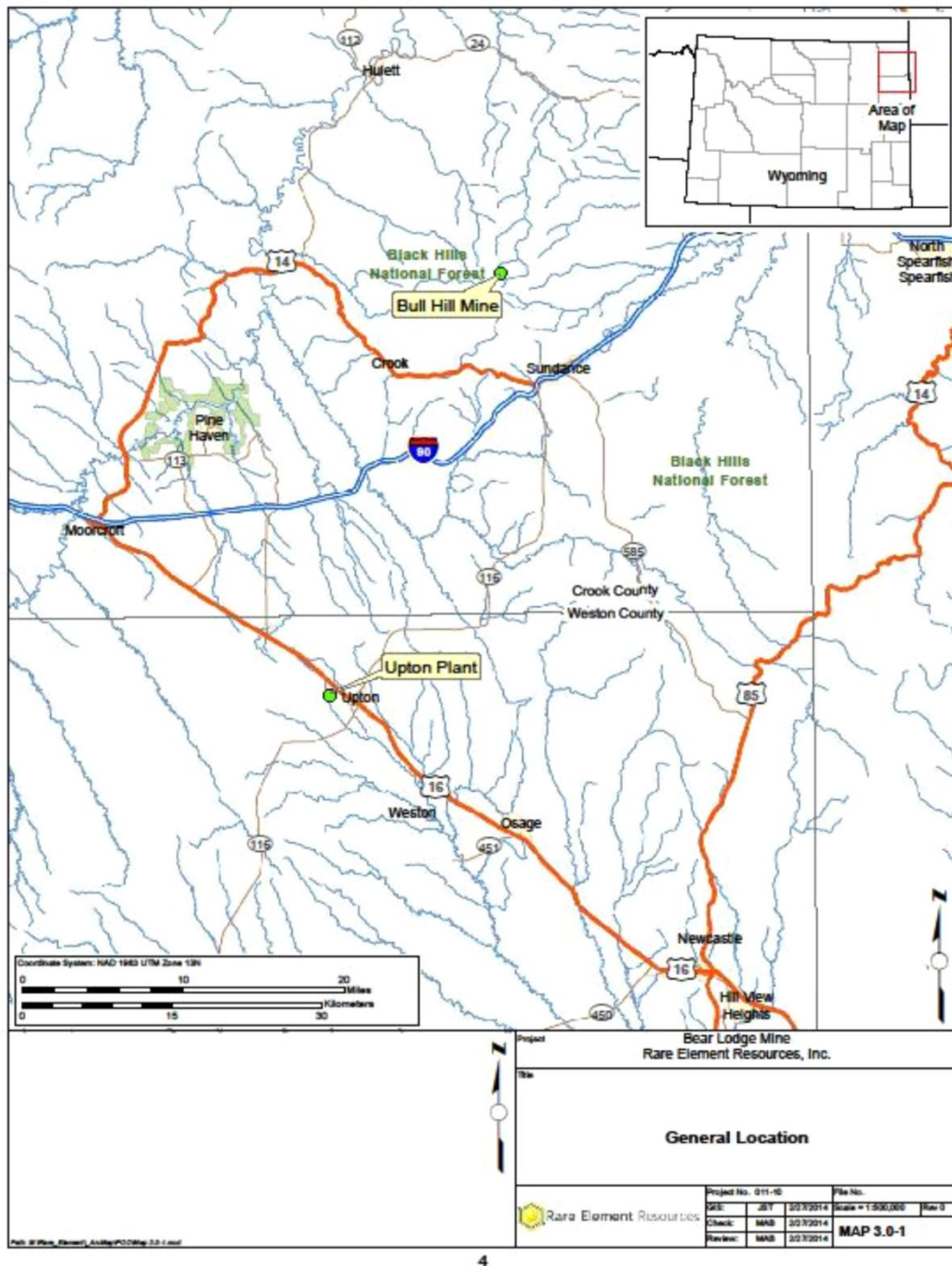
Private lands are used for livestock grazing, cultivation, timber management and recreation.



Drill rig conducting mineral exploration on Bull Hill Mountain.

Photo provided courtesy of Rare Element Resources, Inc.

Figure 1. Project Location



Proposed Action

The Bull Hill Mine portion of the project is in the Bear Lodge Mountains, a narrow northwest-trending range situated in northeastern Wyoming. Physiographically, the mountains are a north-westerly extension of the Black Hills uplift of western South Dakota. The range is characterized by grass and pine-covered mountains reaching an elevation of 6,400 feet. The mountains have moderate slopes covered by western yellow (Ponderosa) pine and aspen forest interspersed with dense thickets of brush. Narrow grassy meadows cover the upper reaches of seasonal drainages.

Proposed Bull Hill Mine and Associated Facilities (Figure 2)

- A Physical Upgrade (PUG) Plant, located within the Mine Area, is designed to maximize concentration of the rare earth minerals and produce a pre-concentrate using a crushing, screening, and gravity separation process depending on the ore type. The PUG process is designed to concentrate the rare earth-bearing fines and reduce the physical mass. The PUG area will also include administration buildings for personnel, guard station, maintenance of vehicles, storage areas for blasting materials, gas and diesel storage tanks for equipment. A 6-foot chain link fence will be constructed around the PUG area.
- The waste rock facility will be located on private property in Section 16 of T52N R63W which is adjacent to the mineable pit and is estimated at 426 acres in size. This area includes a stock pile location for the low grade ore material. An underdrain water collection system will be constructed to control seepage and collect naturally occurring flows from seeps and springs. The collection system will be drained into sediment ponds. A diversion channel will also be constructed for approximately 4,000 feet of Beaver Creek.
- Conventional truck and excavator open pit mining methods will be utilized. The mineral material to be removed lies within the oxide layer of the soil. There are areas of the Mineable Pit that contain variable amounts of weathered oxide ores or oxide-carbonate (OxCa) ores, and that contain variable grades of stockwork mineralization adjacent to the higher grade ores. The pit will have a disturbance footprint of approximately 232 acres. Two haul routes from the pit will be constructed with a 100 foot width between the PUG plant and the waste rock facility. A 5-strand barbed wire fence will be constructed around the mine and waste rock facility.
- To construct the open pit, blasting will be required. Explosives (consisting of ammonium nitrate and fuel oil) and detonators (i.e. blasting caps, electrical detonators, and explosive detonator cords) will be stored separately in accordance with the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives requirements.
- The production rate of the mine is estimated at 500 tons per day of high grade oxides for the first 9 years. As the operation continues, production rates are estimated to increase to 1,000 tons per day. It is estimated the mineable pit will be depleted by year 25. Processing of low grade and other stock piled ores will continue up through year 43.
- A production well is proposed to provide water for the PUG processing and dust control. The well is located on National Forest System Lands. The well will supply water to a water storage tank via a waterline. It is estimated that up to 74 gallons per minute of water will be required to maintain the operation of the PUG plant and mine, and provide potable water to mine workers.
- Approximately 8.71 miles of NFS roads (Table 1); will be removed from public access as they will be included in the mine area (Figure 2).

Project Description

Bear Lodge Project EIS

Table 1. Existing NFS Roads to be Removed from Public Access			
Road Name	NFS Road	Current Public Status of Road	Miles within Bull Hill Mine
Taylor Divide BR 2A	838.2A	Open for Public	0.40
Whitelaw	851.1	Open for Public	2.21
Whitelaw BR 1A	851.1A	Closed to Public	0.34
Whitelaw BR 1B	851.1B	Open for Public	1.23
Whitelaw BR 1C	851.1C	Closed to Public	0.56
Whitelaw BR 1D	851.1D	Open for Public	0.20
Whitelaw BR 1E	851.1E	Closed to Public	0.21
Cole Springs	879.1	Open for Public	2.60
Cole Springs BR 1A	879.1A	Open for Public	0.86
Cole Springs BR 1C	879.1C	Open for Public	0.14
Total			8.75

Source: Table 4.3-1 in the Plan of Operations

- To manage the surface water runoff in the mine area, diversion channels will be constructed around the pit and waste rock facility and flow into six sediment ponds before being naturally discharged into the neighboring creeks. Sediment ponds have been designed for a 10 year frequency, 24 hour duration event and any discharges will be in accordance with State of Wyoming standards.
- At full staffing, mine employment is estimated at about 70 workers. The mine would operate 5 days a week with two 10-hour shifts a day, while the PUG would be operated 5 days a week for two 8-hour shifts day.

Miller Creek Access Road and Power Line

- A main access road (Miller Creek Road) to the mine area is proposed along County Roads 208, 266 and 8 and Forest Service System Roads 854 and 851. This 13 mile access route would be upgraded to accommodate two-way driving traffic in 12 foot lanes with 4 foot shoulders. The total right-of-way for the access route would be 80 feet. For safety, the route would be designed with grades under 6 percent. The mining traffic is estimated between 13 to 17 round trips of semi-trucks of processed ore material each day during operation. This estimate does not include worker traffic or delivery supply vehicles.
- A 69kV, 5 strand transmission line would be constructed above ground to provide electricity to the mine area. The transmission line requires a right-of-way of 100 feet to manage vegetation. Approximately 1.5 miles of the power line would cross NFS lands, while the remainder would be on private and State of Wyoming lands.

Reclamation

- For areas of ground disturbance (i.e. roads, mineable pit, waste rock facility), topsoil will be stored in designated stockpiles within the waste rock facility and PUG plant area and used for future reclamation.
- Reclamation and closure are expected to take place progressively during mining operations. It is assumed that all closure and reclamation (excluding monitoring) will be completed within 2 years following the completion of mining. Monitoring will continue following closure and reclamation until stabilization of soil, vegetation, and water quality have been reached.

Continued Exploration Plan

- The Plan of Operations, Appendix P includes continuing mineral exploration to evaluate the rare earth resource and other locatable minerals. Exploration would include drilling, trenching, and bulk sampling. Site specific exploration plans, including access requirements will be developed and

Project Description

Bear Lodge Project EIS

presented to the Forest Service for review. Forest Service will evaluate and approve the exploration plans prior to implementation.

- Exploration drilling includes approximately 2000 rotary or core holes to an average depth of 750 feet. Annually, about 48 holes are expected for the exploration program.
- Approximately 20,000 linear feet of trenching is proposed over the life of the mine.

Proposed surface disturbance by landownership shown in Table 2 and on Figure 2.

Table 2. Disturbance				
Facility	NFS Acres	State of Wyoming Acres	Private Acres	Total
Physical Upgrade Plant	176	0	0	176
Mineable Pit	232	0	0	232
Waste Rock Facility/Low Grade Ore Stockpile	0	0	426	426
Sediment Trapping Ponds	4	0	10	14
Topsoil Stockpiles	18	0	0	18
Water Line	1	0	0	1
Secondary Road	6	0	0	6
Haul Road	7	0	3	10
Upgrading Miller Creek Access Route – Secondary Road	32	8	42	82
Power Line	19	13	21	53
Total	495	21	501	1018

Summarized from Table 4.5-1 in the Plan of Operations, Feb 2014.

Connected Action

Hydromet Plant – Upton, Wyoming (Figure)

- While the Hydromet Plant is proposed as a result of the Bull Hill Mine, it is recognized as a connected action to the project. However, since the plant is located entirely on private lands, there is no Forest Service decision or authorization that can be made and therefore, will not be analyzed in detail for environmental effect analysis in the environmental impact statement.
- The Upton hydromet plant, located on private land, will process the pre-concentrate from the PUG plant through acid leaching followed by additional chemical processing to remove impurities and finally precipitation to produce the final total rare-earth oxides product. The tailings produced from the process will be dewatered, neutralized, and stored in a double lined tailings storage facility adjacent to the hydromet plant.
- The hydromet process includes leaching and precipitation to recover the final product for shipment to customers. Process waste from the hydromet plant will be disposed in lined tailings storage facility (TSF) located adjacent to the plant. Both the hydromet plant and TSF are located on private land.
- Water for the Upton Plant will be provided by a connection to the Upton municipal water system.
- It is estimated at full staffing the Upton Hydromet Plant will employ about 50 workers. The Plan of Operations proposes for a 24 hour a day, 7 days a week work schedule for the plant.

Figure 2. Bull Hill Facilities and Access

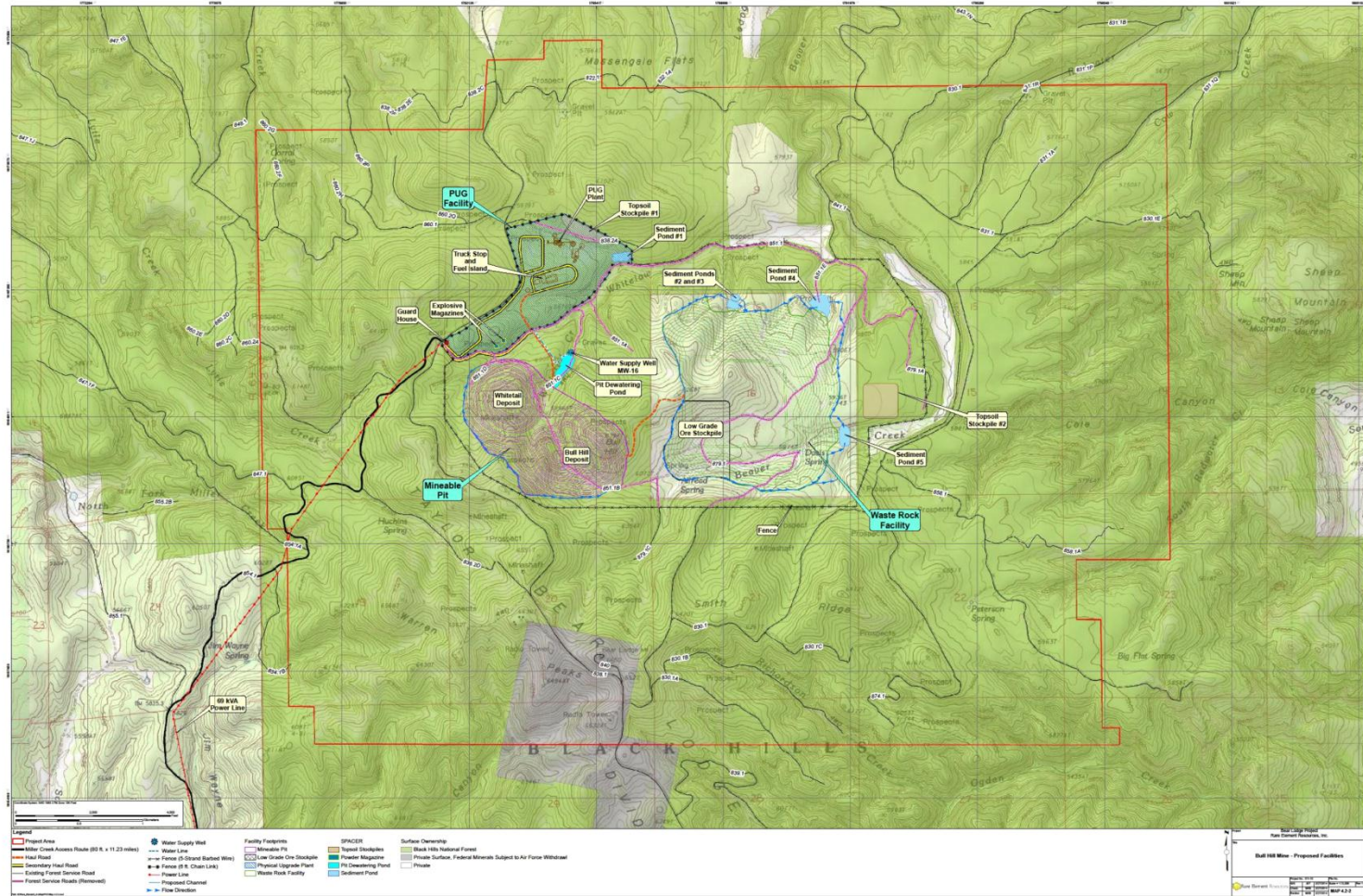
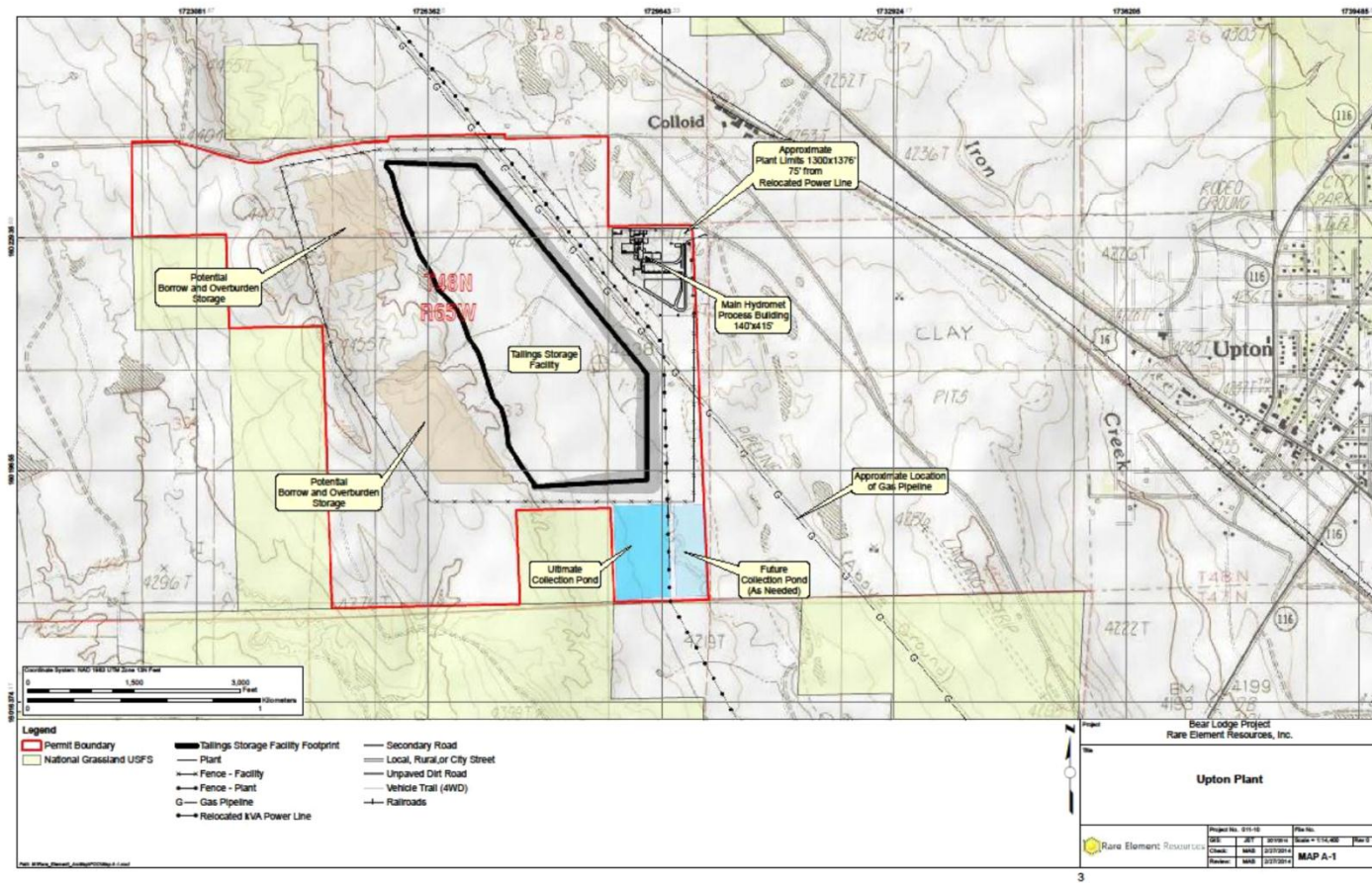


Figure 3. Upton Hydromet Plan Layout



Additional Information

Additional Permits and Authorizations Required

Prior to implementation of the Bear Lodge Project, permits or licenses would be required from local, State, and Federal agencies in accordance with State and Federal regulations and laws. Below, but not limited to, is a list of the permits or licenses expected with this project.

- The Mine Safety and Health Administration (MSHA) would be responsible for enforcing mine safety regulations. MSHA would provide regulatory authority within the Mine Area. Regulations include, but not limited to; electrical, access safety, transportation of materials inside the mine, signage, fencing, storage of materials, human safety, and more.
- Wyoming Department of Environmental Quality: Water Quality Division (WQD), Land Quality Division (LQD), Air Quality Division, State Engineering Office (SEO) and Industrial Siting Council (ISC) Division permits. The LQD would be responsible for the issuance of the Permit-to-Mine. The permit application would include both the Bull Hill Mine and the Upton Plant. The WQD would be responsible for permits to discharge surface water into nearby streams. The SEO would issue a permit for the production well. The ISC permit would include both the Bull Hill Mine and Upton Plant and would regulate the construction or operation of any industrial facility.
- U.S. Army Corps of Engineer would be responsible for issuing a permit for Section 404 of the Clean Water Act. The Corps would be involved in the design and construction of the mine pit, diversion channel, and sediment ponds.
- Nuclear Regulatory Commission would be responsible for permitting the Upton Plant for possessing source materials.
- U.S. Bureau of Alcohol, Tobacco, and Firearms (ATF) would be responsible for issuing a permit for storage of explosives. This permit regulates the handling of explosives materials, including storage facilities and records management.
- The Forest Service would be responsible for issuing special use permits for the power line construction and maintenance to Powder River Energy Corp and a Forest Road and Trail Easement to the County for maintenance of the main access route.
- Crook County would be responsible for issuing permits, agreements, and policy with regards to the construction, reconstruction, maintenance, or use of County roads. The County may also have other permits or agreements in conjunction with State of Wyoming regulations.

Responsible Official

Black Hills National Forest Supervisor Craig Bobzien, 1019 North 5th Street, Custer, South Dakota 57730-7239.

Planning Process

The Black Hills National Forest use information gathered during scoping to conduct an environmental analysis and report the outcome in a draft EIS, which will be made available for public review. Public comments on the draft EIS will be addressed in a final EIS. At that time, a draft Record of Decision will be made available and an objection period initiated. Once any objections are addressed, the Forest Supervisor will issue a final Record of Decision. The anticipated date for the publication of the draft EIS is early 2015. The final EIS is expected in summer 2015.

*Project Description**Bear Lodge Project EIS*

How to submit comments

Comments should be submitted in writing by April 30, 2014. Comments should be submitted to:

Bear Lodge Project EIS
C/O Jeanette Timm, Project Coordinator
Bearlodge Ranger District
PO Box 680
Sundance, WY 82729-0680

Or written comments may left at one of the public meetings or emailed to comments-rocky-mountain-black-hills-bearlodge@fs.fed.us, or via facsimile to 307-283-3727.

It is important that reviewers provide their comments at such times and in such manner that they are useful to the Agency's preparation of the environmental impact statement. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions.

Comments received in response to this solicitation, including names and addresses of those who comment, will become part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered; however, anonymous comments will not provide the Agency with the ability to provide the respondent with subsequent environmental documents.

National Historic Preservation Act

The Black Hills National Forest is inviting public comment at this time pursuant to the National Historic Preservation Act (NHPA) regarding potential effects the proposed action may have on historic properties. An historic properties effects analysis will be completed for this project as per the NHPA implementing regulations found at 36 CFR part 800. Any individuals or parties that wish to provide comments or input that would help the federal government make more informed decisions regarding historic properties are invited to do so.